Patent
Attorney Docket No. 1034469-000035

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	
Elizabeth A. Colbert	Group Art Unit: 1794
Application No.: 10/625,624	Examiner: Ula Corinna Ruddock
Filed: July 24, 2003	Confirmation No.: 8076
For: COATED GYPSUM BOARD PRODUCTS AND METHOD OF MANUFACTURE	

REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Reply Brief is in response to the Examiner's Answer dated July 9, 2009.

I. Grounds of Rejection

Claims 1-19 and 32-39 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,287,103 to Francis et al. in view of U.S. Patent No. 6,105,325 to Zuber et al.

In the paragraph 9 of the Examiner's Answer, the Examiner recognizes that Francis does not disclose a gypsum board that is precoated during manufacture with a coating as recited in Appellant's independent claims 1, 13, 15 and 16, and that a coating penetrates through at least a portion of a facing sheet and into a gypsum core as recited in Appellant's independent claim 1. Although not specifically stated by the Examiner, apparently the Examiner also agrees that Francis does not disclose a coating is disposed on an entirety of the facing sheet as recited in Appellant's independent claims 1, 13, 15 and 16, as the Examiner uses Zuber to provide this feature.

II. Zuber Does Not Teach A Gypsum Board That Is Precoated During Manufacture With A Coating

On line 8 of page 4 of the Examiner's Answer, the Examiner asserts that Zuber discloses assembling a plasterboard with at least one joint coat which can be equated to Appellant's limitation that the gypsum board is precoated during manufacture.

Zuber relates to a construction assembly for interior works including flat prefabricated elements, especially boards, and a joint point coat capable of being used especially for finishing of a joint. The prefabricated elements have clearly already been manufactured and a joint coating is applied subsequent to their being fabricated during the construction of interior works. The flat free prefabricated

elements include a plasterboard and at least one sheet of lining paper and at least one outer layer which has a visible outer face ready to be decorated. The flat elements are assembled together and the joints are finished with joint pointing coat to obtain an overall visible outer surface which is relatively uniform or plane including the region of the joints. Thus, Zuber does not disclose precoating during manufacturing of a gypsum board as recited in Appellant's independent claims 1, 13, 15 and 16.

III. Zuber Does Not Teach An Entirety Of A Facing Sheet Coated With a Joint Composition

On line 4 of page 4 of the Examiner's Answer, the Examiner states that Zuber's disclosure of a coating forming a "substantially plane outer surface" can be properly equated to Appellant's "coating disposed on an entirety of the facing sheet."

The Examiner's interpretation of the phrase "joint pointing coat forming a substantially plane outer surface" being equated with a "coating disposed on an entirety of the facing sheet" is traversed. As disclosed in the abstract of Zuber, a plasterboard comprises a plaster body and at least one sheet of lining paper. The sheet of lining paper includes an upper layer or web including white cellulose fibers. A pigment layer covers the upper layer or web. The pigment layer includes a mineral filler of a light color and binder. Thus, the pigment layer is part of the sheet and forms a layer separate from the upper layer and separate from the plaster body.

The substantially plane outer surface of Zuber refers to "a joint pointing coat jointing the plasterboards to form a substantially plane outer surface comprising the visible surface of said at least one joint and the visible surface of said pigment layer." Thus, "a plane outer surface" is not made only by the joint pointing coat but by both

the joint pointing coat and the pigment layer of the sheet. This refers to the plane outer surface including a first part corresponding to a visible outer surface of the joint pointing coat and a second part corresponding to the visible outer surface of the pigment layer of the sheet (the part of the pigment layer not covered by the joint pointing coat). Thus, the joint pointing coat does not entirely cover the pigment layer.

As stated in Zuber at col. 2, lines 9-24, the composition of the joint pointing coat is similar to the composition of the upper layer or web and/or the pigment layer so that the joint pointing coat in a dry state and the upper web and/or pigment layer form a substantially homogenous outer surface having similar coloration. If Zuber is interpreted such that the joint pointing coat covered the entirety of the sheet of lining paper then the visible outer surface would be homogeneous since it would correspond only to the outer surface of the joint pointing coat. It is because the joint pointing code does not cover the entirety of the sheet of lining paper that Zuber provides a joint pointing coat having a composition similar to the composition of the upper layer and/or pigment layer.

Thus, Zuber does not provide the feature of a coating provided on an entirety of the facing sheet as in Appellant's independent claims 1, 13, 15 and 16.

IV. Neither Francis Nor Zuber Teaches a Coating Penetrating Into A Gypsum Core

On line 7 of page 4 of the Examiner's Answer, the Examiner states that the pigment layer covers the facing sheet. If the Examiner is considering that the coating disposed on an entirety of the facing sheet is disclosed in the pigment layer of Zuber, Appellant's note that the pigment layer covers the upper layer or web of the

sheet of lining paper which itself covers the plaster body. Thus, the pigment layer does not penetrate through at least a portion of the facing sheet into the gypsum core as recited in claim 1. Nor does the pigment layer have a level 4 or 5 finish nor is the coating a diluted form of a joint compound.

On the first paragraph of page 5 of the Examiner's Answer, the Examiner asserts that it would have been obvious to one having ordinary skill in the art to have the joint composition of Francis and Zuber penetrate through the paper into the gypsum core and because the same materials are being used as the facing sheet (paper) and coating (joint compound), the coating would penetrate therethrough. This assertion is respectfully traversed.

In Zuber, the joint-pointing coat is applied after the wall is assembled. And, there is no specific teaching as to when or how the pigment layer is applied to the upper web. For example, the pigment layer could be applied to the upper web before the upper web is even formed into the gypsum board. Thus, there is no teaching or suggestion that the pigment layer or the joint-pointing coat penetrates into the gypsum core.

Francis teaches only the application of a joint composition in certain regions of the board. In general, Francis teaches that the remainder of the facing is not coated at all. See "dry paper cover" at column 2, lines 27 - 33.

In claim 1, the product results from a combination of the materials used and the methods by which they are assembled. For example, one method of enabling the coating to penetrate into the gypsum core is to apply the coating when the gypsum core is wet. See paragraphs [0044]-[0046] of Appellant's as-filed specification. The depth of penetration of the coating into the gypsum core is

influenced by the relative moisture level and/or degree of set of the gypsum board. Francis teaches a specific viscosity of the joint compound (350 to about 750 Brabender units at 70F, column 6, lines 55 - 65), which may be good for applying a joint compound, but is more than likely too thick to be used as a skim coat intended to precoat the board on-line, let alone to penetrate into the surface of the facing. A similar argument can be made for Zuber where a joint pointing coat is used to finish a joint to obtain a uniform outer surface. There is no disclosure in Zuber of a coating penetrating a gypsum core

In the present case, differences between the claimed features and the applied prior art can be determined from the information provided in Francis, Zuber and the specification of the present application. A diluted form of joint compound applied to a wet board is going to result in a different structure and appearance than regular joint compound applied to a dry board. Also, a precoated board, i.e., a board which is coated on-line during manufacture and therefore when horizontal, will show uniformity in terms of coating thickness that cannot be achieved when a compound is trowelled on an already erected wall.

For example, better adhesion of the facing sheet to the gypsum board and increased board strength, as measured by nail pull, result from the methods taught in the published application. See, in particular, paragraphs [0064] to [0067] of the present application. The coating improves nail pull values by up to 25%. This allows for the use of facing sheets of lower weight or quality, with attendant cost reductions. These improved properties may not be attained by coating the boards in an already erected wall and in fact by only filling the shallow valley formed by the edges. These improved properties may only be attained by coating one side of the boards during

the manufacturing process, which is reflected in the wording of claim 1 (which is about a *precoated* board).

As a result of the precoating process, *the entire surface* is coated and a portion of the coating penetrates into the gypsum core. As is explained in the present specification, the depth of penetration of the coating is influenced by the relative moisture level and/or degree of set. And, if the moisture content is low, the coating may only penetrate into the paper facing sheet, i.e., and not into the core. See paragraph [0044] of the application. Although the present invention is not limited to the preferred disclosed embodiments, one way of having the coating penetrate into the paper is to have the coating applied on a relatively wet board.

In contrast to the present application, Francis teaches only providing the joint compound in the valleys at the edge of the boards. Zuber teaches applying the joint-pointing composition on a sealing coat intended for forming the joints between the flat elements. Francis and Zuber do not teach putting the coating over the entirety of the facing sheet. In addition, Francis and Zuber neither mention nor suggest that the coating penetrates into the core. Furthermore, Francis and Zuber teach applying the coating to an assembled board that is presumably well set and dry. Accordingly, whether or not the same materials are used, as alleged by the Examiner, Francis and Zuber do not teach that the coating penetrates into the core. In fact, according to paragraph [0044] of the present application, it is likely that the coatings of Francis and Zuber do not penetrate into the core. For example, when the gypsum is in a more advanced state of set, the penetration of the coating is reduced. Accordingly, contrary to the assertions of the Examiner, there is no teaching or suggestion of the

Francis and Zuber coatings penetrating into the core as in Appellant's independent claim 1.

Accordingly, the rejection of the claims should be reversed.

Respectfully submitted,

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